

In the Claims:

Please cancel claim 26, and please amend claims 1, 2, 5, 8, 13, 18, 21, 27, 32, 35, 40, 43, 48 and 51 as follows:

1. (Currently Amended) An interconnecting unit for electrically coupling a microelectronic die having an integrated circuit to voltage sources and signal sources, the interconnecting unit comprising:

a substrate having a cap-zone defined by an area ~~for that is to be encapsulated~~ encapsulation by a protective casing, a plurality of interconnects having a plurality of first elements in the cap-zone, a plurality of second elements arranged in an array outside of the cap-zone, and a plurality of transmission lines coupling the first elements to the second elements; and

a gasket removably attached to the substrate outside of the cap-zone, wherein at least a portion of the gasket is adjacent to at least a portion of the cap-zone.

2. (Currently Amended) The interconnecting unit of claim 1 wherein:

the substrate has a die-side ~~for attachment~~ to which the die is to be attached and the cap-zone is on the die-side surrounding the contact array; and

the gasket is a thin film disposed on the die-side of the substrate such that the thin film surrounds the cap-zone.

3. (Original) The interconnecting unit of claim 2 wherein the thin film is a pliable tape applied to the substrate.

4. (Original) The interconnecting unit of claim 2 wherein the thin film is a polymeric film deposited on the substrate.

5. (Currently Amended) The interconnecting unit of claim 1 wherein:

the substrate has a slot, a die-side ~~for attachment~~ to which the die is to be attached, and a wire-side opposite the die-side;

the first elements of the interconnects comprise a plurality of contact elements being arranged in a contact array adjacent to the slot on the wire-side of the substrate such that the cap-zone surrounds the contact array and the slot on the wire-side of the substrate, the second elements comprise ball-pads arranged outside of the cap-zone on the wire-side of the substrate, and the transmission lines comprise electrically conductive lines; and

the gasket is a thin film disposed on the wire-side of the substrate such that the thin film surrounds the cap-zone.

6. (Original) The interconnecting unit of claim 5 wherein the thin film is a pliable tape applied to the substrate.

7. (Original) The interconnecting unit of claim 5 wherein the thin film is a polymeric film deposited on the substrate.

8. (Currently Amended) The interconnecting unit of claim 1 wherein:

the substrate has a slot, a die-side for attachment to which the die is to be attached, and a wire-side opposite the die-side;

the first elements of the interconnects comprise a plurality of contact elements being arranged in a contact array adjacent to the slot on the wire-side of the substrate such that the cap-zone includes a first cap region surrounding the contact array and the slot on the wire-side of the substrate and a second cap region surrounding an area on the die-side that is covered by the die when the die is attached to the substrate, the second elements comprise ball-pads arranged outside of the first cap region on the wire-side of the substrate, and the transmission lines comprise electrically conductive lines; and

the gasket comprises a first thin film disposed on the die-side of the substrate surrounding the first cap region and a second thin film disposed on the wire-side of the substrate surrounding the second cap region.

9. (Original) The interconnecting unit of claim 8 wherein the first and second thin films are pliable tape sections.

10. (Original) The interconnecting unit of claim 8 wherein the first and second thin films are polymeric films.

11. (Original) The interconnecting unit of claim 1 wherein the gasket is a piece of tape adhered to the substrate, the tape having an opening with edges bordering the cap-zone.

12. (Original) The interconnecting unit of claim 1 wherein the gasket is a compressible film material adhered to the substrate, the film having an opening with edges bordering the cap-zone.

13. (Currently Amended) An interconnecting unit for electrically coupling a microelectronic die having an integrated circuit to voltage sources and signal sources, the interconnecting unit comprising:

a substrate having a cap-zone defined by an area ~~for that is to be encapsulated~~ encapsulation by a protective casing, a plurality of contact elements arranged in the cap-zone, a plurality of ball-pads arranged in a ball-pad array outside of the cap-zone, and a plurality of conductive lines coupling the contact elements to the ball-pads; and

a removable barrier projecting away from a surface of the substrate outside of the cap-zone, wherein at least a portion of the barrier is adjacent to the cap-zone.

14. (Original) The interconnecting unit of claim 13 wherein the barrier comprises a film having an opening with edges bordering the cap-zone.

15. (Original) The interconnecting unit of claim 14 wherein the film is a thin tape applied to the substrate.

16. (Original) The interconnecting unit of claim 14 wherein the film is polymeric coating applied to the substrate.

17. (Original) The interconnecting unit of claim 13 wherein the barrier is a ridge formed in the substrate that surrounds the cap-zone.

18. (Currently Amended) The interconnecting unit of claim 13 wherein:

the substrate has a slot, a die-side for attachment to which the die is to be attached, and a wire-side opposite the die-side, wherein the contact elements are arranged in a contact array adjacent to an edge of the slot on the wire-side of the substrate, wherein the ball-pad array is spaced apart from the contact array on the wire-side of the substrate, and a boundary of the cap-zone is between the contact array and the ball-pad array on the wire-side of the substrate; and

the barrier comprises a film having an opening with edges bordering the boundary of the cap-zone.

19. (Original) The interconnecting unit of claim 18 wherein the film is a thin tape applied to the substrate.

20. (Original) The interconnecting unit of claim 18 wherein the film is polymeric coating applied to the substrate.

21. (Currently Amended) An interconnecting unit for electrically coupling a microelectronic die having an integrated circuit to voltage sources and signal sources, the interconnecting unit comprising:

a substrate having a cap-zone defined by an area for that is to be encapsulated encapsulation by a protective casing, an opening in the cap-zone, a

plurality of contact elements arranged in the cap-zone along an edge of the opening, a plurality of ball-pads arranged in a ball-pad array outside of the cap-zone, and a plurality of conductive lines coupling the contact elements to the ball-pads; and

a barrier on the substrate outside of the cap-zone, wherein at least a portion of the barrier is adjacent to at least a portion of the cap-zone, and wherein the barrier covers at least one of the plurality of ball-pads.

22. (Original) The interconnecting unit of claim 21 wherein the barrier comprises a film having an opening with edges bordering the cap-zone.

23. (Original) The interconnecting unit of claim 22 wherein the film is a thin tape applied to the substrate.

24. (Original) The interconnecting unit of claim 22 wherein the film is polymeric coating applied to the substrate.

25. (Original) The interconnecting unit of claim 21 wherein the barrier is a ridge formed in the substrate that surrounds the cap-zone.

26. (Cancelled)

27. (Currently Amended) A packaged microelectronic device assembly, comprising:

a microelectronic die having an integrated circuit and a plurality of bond-pads on an exterior surface, at least a set of the bond-pads being operatively coupled to the integrated circuit;

a substrate having a cap-zone defined by an area for that is to be encapsulated encapsulation by a protective casing, a plurality of contact elements arranged in the cap-zone, a plurality of ball-pads arranged in a ball-pad array outside of the cap-zone, and a plurality of conductive lines coupling the contact elements to the

ball-pads, the microelectronic die being attached to the substrate, and the contact elements being electrically coupled to corresponding bond-pads;

a protective casing covering the cap-zone; and

a gasket attached to the substrate outside of the cap-zone, wherein at least a portion of the gasket is adjacent to at least a portion of the protective casing, and wherein the gasket covers at least one of the plurality of ball-pads.

28. (Original) The packaged microelectronic device of claim 27 wherein the gasket comprises a film having an opening with edges bordering the cap-zone.

29. (Original) The packaged microelectronic device of claim 28 wherein the film is a thin tape applied to the substrate.

30. (Original) The packaged microelectronic device of claim 28 wherein the film is polymeric coating applied to the substrate.

31. (Original) The packaged microelectronic device of claim 27 wherein the barrier is a ridge formed in the substrate that surrounds the cap-zone.

32. (Currently Amended) The packaged microelectronic device of claim 27 wherein:

the substrate has a slot, a die-side to which the die is to be attached, and a wire-side opposite the die-side, wherein the contact elements are arranged in a contact array adjacent to an edge of the slot on the wire-side of the substrate, wherein the ball-pad array is spaced apart from the contact array on the wire-side of the substrate, and a boundary of the cap-zone is between the contact array and the ball-pad array on the wire-side of the substrate; and

the gasket comprises a film having an opening with edges bordering the boundary of the cap-zone.

33. (Original) The packaged microelectronic device of claim 32 wherein the film is a thin tape applied to the substrate.

34. (Original) The packaged microelectronic device of claim 32 wherein the film is polymeric coating applied to the substrate.

35. (Currently Amended) A packaged microelectronic device assembly, comprising:

a microelectronic die having an integrated circuit and a plurality of bond-pads on an exterior surface, at least a set of the bond-pads being operatively coupled to the integrated circuit;

a substrate having a cap-zone defined by an area for that is to be encapsulated encapsulation by a protective casing, a plurality of contact elements arranged in the cap-zone, a plurality of ball-pads arranged in a ball-pad array outside of the cap-zone, and a plurality of conductive lines coupling the contact elements to the ball-pads, the microelectronic die being attached to the substrate, and the contact elements being electrically coupled to corresponding bond-pads;

a protective casing covering the cap-zone; and

a barrier projecting away from a surface of the substrate outside of the cap-zone, wherein at least a portion of the barrier is adjacent to at least a portion of the protective casing, and wherein the barrier covers at least one of the plurality of ball-pads.

36. (Original) The packaged microelectronic device of claim 35 wherein the barrier comprises a film having an opening with edges bordering the cap-zone.

37. (Original) The packaged microelectronic device of claim 36 wherein the film is a thin tape applied to the substrate.

38. (Original) The packaged microelectronic device of claim 36 wherein the film is polymeric coating applied to the substrate.

39. (Original) The packaged microelectronic device of claim 35 wherein the barrier is a ridge formed in the substrate that surrounds the cap-zone.

40. (Currently Amended) The packaged microelectronic device of claim 35 wherein:

the substrate has a slot, a die-side to which the die is to be attached, and a wire-side opposite the die-side, wherein the contact elements are arranged in a contact array adjacent to an edge of the slot on the wire-side of the substrate, wherein the ball-pad array is spaced apart from the contact array on the wire-side of the substrate, and a boundary of the cap-zone is between the contact array and the ball-pad array on the wire-side of the substrate; and

the barrier comprises a film having an opening with edges bordering the boundary of the cap-zone.

41. (Original) The packaged microelectronic device of claim 40 wherein the film is a thin tape applied to the substrate.

42. (Original) The packaged microelectronic device of claim 40 wherein the film is polymeric coating applied to the substrate.

43. (Currently Amended) A packaged microelectronic device assembly, comprising:

a microelectronic die having an integrated circuit and a plurality of bond-pads on an exterior surface, at least a set of the bond-pads being operatively coupled to the integrated circuit;

a substrate having a cap-zone defined by an area for encapsulation by a protective casing, an opening in the cap-zone, a plurality of contact elements arranged

in the cap-zone along an edge of the opening, a plurality of ball-pads arranged in a ball-pad array outside of the cap-zone, and a plurality of conductive lines coupling the contact elements to the ball-pads, the microelectronic die being attached to the substrate, and the contact elements being electrically coupled to corresponding bond-pads;

a protective casing covering the cap-zone and filling the opening; and

a removable barrier on the substrate outside of the cap-zone, wherein at least a portion of the barrier is adjacent to at least a portion of the protective casing.

44. (Original) The packaged microelectronic device of claim 43 wherein the barrier comprises a film having an opening with edges bordering the cap-zone.

45. (Original) The packaged microelectronic device of claim 44 wherein the film is a thin tape applied to the substrate.

46. (Original) The packaged microelectronic device of claim 44 wherein the film is polymeric coating applied to the substrate.

47. (Original) The packaged microelectronic device of claim 43 wherein the barrier is a ridge formed in the substrate that surrounds the cap-zone.

48. (Currently Amended) The packaged microelectronic device of claim 43 wherein:

the substrate has a slot, a die-side to which the die is to be attached, and a wire-side opposite the die-side, wherein the contact elements are arranged in a contact array adjacent to an edge of the slot on the wire-side of the substrate, wherein the ball-pad array is spaced apart from the contact array on the wire-side of the substrate, and a boundary of the cap-zone is between the contact array and the ball-pad array on the wire-side of the substrate; and

the barrier comprises a film having an opening with edges bordering the boundary of the cap-zone.

49. (Original) The packaged microelectronic device of claim 48 wherein the film is a thin tape applied to the substrate.

50. (Original) The packaged microelectronic device of claim 48 wherein the film is polymeric coating applied to the substrate.

51. (Currently Amended) A packaged microelectronic device assembly, comprising:

a microelectronic die having an integrated circuit and a plurality of bond-pads on an exterior surface, at least a set of the bond-pads being operatively coupled to the integrated circuit;

a substrate having a cap-zone defined by an area ~~for that is to be encapsulated~~ encapsulation by a protective casing and a plurality of conductive features, at least one conductive feature having a contact element coupled to corresponding bond-pad on the die, a ball-pad outside of the cap-zone, and a conductive trace coupling the contact element to the ball-pad;

a protective casing covering the cap-zone; and

a removable seal on at least one side of the substrate, the seal being configured to inhibit the protective casing from covering the substrate outside of the cap-zone.

52-64. (Cancelled)